

The *torsilinea* species group (subgenus *Mocrendes* Nye, 1975) of the genus *Platyja* Hübner, [1823] (Lepidoptera: Erebididae), with descriptions of four new species

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Abstract: Following a general introduction to features and putative relationships of the genus *Platyja* Hübner, [1823], a review of the Indo-Australian section corresponding to the subgenus *Mocrendes* Nye, 1975 (= *torsilinea* species group) is presented. This group, ranging from the Indian subcontinent to the Australo-Papuan region, is re-defined on basis of features of the male genitalia (presence of an ampulla-like process on costa termed ‘ampulloid’) and shown to currently comprise nine species, four of which new to science and herein described, namely *P. (M.) heterogenea* sp. nov. (Sulawesi), *P. (M.) sukabumensis* sp. nov. (Java), *P. (M.) lemurella* sp. nov. (Java, Flores) and *P. (M.) carpentariella* sp. nov. (Queensland). The concepts of *P. (M.) torsilinea* (Guenée, 1852) and *P. (M.) ciacula* Swinhoe, 1893 are found to have been based on the two sexes of the same species and are therefore brought together, though the latter is ranked as a subspecies (stat. nov.) of the former to account for some singularities in the nominotypical population from the Andaman Islands. The supposedly long-known females of ‘*torsilinea*’ are instead shown to be the hitherto unknown ones of *P. (M.) exviola* Hampson, 1891. The uncertain identity of *Megacephalomana pilosum* (Pagenstecher, 1888), nomen dubium, is briefly discussed.

Key words: Review, moths, taxonomy, types, Indo-Australia.

Introduction

By virtue of their greatly atypical pattern, many authors more or less implicitly recognised the close relationships of species variously circumscribed within genera like *Platyja* Hübner, [1823], *Iontha* Doubleday, 1842, *Facidia* Walker, 1865 and *Megacephalomana* Strand, 1943 (replacement name for *Megacephalon* Saalmüller, 1880) (e.g., Tams 1924; Joannis 1929; Sugi 1982; Holloway 2005). Not least, some species have variously been associated with one or other of these genera, whose boundaries have therefore remained rather blurred.

The distinctive feature of these species occurs in the unusual trend of the postmedial line of forewing. In fact, it greatly protrudes beyond the discal cell into the distal field, being actually positioned where a submarginal line would be

expected, but instead of running down to the anal margin, before 1A+2A it turns back upwards so as to outline below CuA1 a pedunculate lobe ‘hanging down’ from the median field. It then reaches the discal cell from below and proceeds proximally along Cubitus for a short section up to where it incurves posteriorly to eventually reach the anal margin. As a result, the median and distal fields of the forewing appear as mutually interlobed on the wing disc. Notably, the pedunculate lobe bubbles as a sort of drop between CuA2 and 1A+2A perpendicularly to the anal margin. The filling of this unusual mark is generally much paler than the ground colour.

There are however exceptions to this generalised blueprint, such as species in which the body structure and habitus strictly match those of typical “*Platyja* s. l.” but whose crosslines follow instead another path or are obliterated, and this most often in only one of the sexes. As a matter



of fact, in several species the unusual trend of the postmedial is clearly visible only in the females, as the pattern of males is either faint or entirely obscured. Species of this genus group may in fact show a remarkable sexual dimorphism, with males highly deviant not just in pattern but also in wing shape from the usually more uniform aspect of females. In fact, sometimes male and female of a same species have been described as two separate species. In several species, the males bear tails on the hindwings or elevated ridges flanked by loosely scaled interspaces whose most likely function is that to act as resonators, a feature also seen in many other erebid genera (e.g., *Anisoneura* Guenée, 1852, *Delgamma* Moore, 1885, *Hypospila* Guenée, 1852). Males often also bear voluminous tufts of scales on legs or abdomen and some of the species whose hindwings are tailed also show an exceedingly elongated abdomen. The females instead are sometimes so similar between species as to make association of sexes difficult when more than one species occur sympatrically, while taxonomic identification of males is usually easier.

Such difficulties long prevented a consistent taxonomic approach to this assemblage of genera until the character that species of the historical generic groups *Platyja* Hübner, [1823] and *Iontha* Doubleday, 1842 show tripectinate antennae in the male sex was highlighted (Zilli, 2001). Such outstanding and rare feature among the Lepidoptera had long been overlooked simply because rami of the third row lie precisely midventrally along the flagellum. Furthermore, in several species they appear as partially reclinate lamellae, so that unless the antenna is observed obliquely it looks bipectinate. A suggestion that maintaining *Iontha* separate from *Platyja* could make the latter paraphyletic (Zilli 2001), was eventually implemented by Holloway (2005) with subsuming the former into the latter.

If the characters of the postmedial line and tripectinate male antennae are considered, the majority of species of the historical genera treated here actually show them jointly, though some outliers with one or the other of the two features remain, that is species with clearly *Platyja*-like postmedial but male antennae filiform (or slightly tuberculate) or vice versa. For the sake of precision though, some species of this assemblage whose male antennae look filiform are in reality monopectinate, as they have lateral rami reduced but the midventral row remains well-expressed. A more precise statement of this particular character of the group is thus that of the male antenna bearing a midventral row of

rami or teeth.

Regarding the systematic affinities of the *Platyja* genus group, various attempts have been made to trace its relationships. Holloway (2005; 2011) placed *Platyja* in unresolved Catocalinae/Erebinae, but considered *Avittonia* Hampson, 1926, which, except for the trend of postmedial (no pedunculated loop being present) strictly matches in habitus species of *Platyja* and also has midventrally serrate male antennae, to be nearest to “*Ugia*” *serrilinea* Hampson, 1926, a species with normal antennae instead. Zahiri *et al.* (2012), in a molecular phylogeny of the Erebidae, recovered *Platyja umminia* (Cramer, [1780]) in a cluster together with Hulodini, Ercheiini and other genera, namely *Ischyja* Hübner, [1823], *Praxis* Guenée, 1852, *Anisoneura* Guenée, 1852, *Ercheia* Walker, 1858, *Hulodes* Guenée, 1852 and *Ericeia* Walker, 1858, although without support. However, in the analysis by Homziak *et al.* (2019) the nearest neighbour of *Platyja umminia* is *Ischyja* with good support, both clustering with different genera from the previous analysis except for *Anisoneura*. A relationship between *Platyja* and *Ischyja* seems thus to have been assessed, though the exact topology of the phylogenetic relationships of the whole group has yet to be reconstructed.

In this respect, it is worth bringing here important observations by Bänziger (1982 and pers. comm.), who recorded species of *Platyja* (*umminia*, *sumatrana* [C. & R.] Felder & Rogenhofer, 1874, *suffumata* Guenée, 1852) to be particular fruit-piercing moths without tearing hooks and erectile barbs on proboscides, typical instead of fruit-piercers par excellence such as calpine erebids, but with an extremely sclerotized proboscis ending in sharp, beak-like tip, and galeae capable of alternate motion. These features have also been found, though with notable modifications, in *Sarobacala albopunctata* (Semper, 1901), a species with habitus profoundly different from the *Platyja* genus group and with simple antennae. Bänziger (pers. comm.) has further kindly provided us with other important details regarding the unique proboscis of these two genus groups, such as the presence of blade-like bristles along the dorsal food-entrance slot. However, these do not work to pierce a hole through the skin of the fruit but rather slash the fruit pulp to release its sap (“rasping spines” *sensu* Bänziger 1980). They also work as a filter to prevent large pulp clumps from obstructing the food canal, besides in part to keep the galeae linked together (Bänziger pers. comm.).

Distribution of the group is typically



palaeotropical, with extensions into the SE Palaearctic and Australasia. Due to the obviously unsatisfactory assortment of species among genera of this group and presence of a number of undescribed ones, it was decided to undertake a whole review of *Platyja* and its relatives, of which this contribution dedicated to the Indo-Australian *torsilinea* species group, for which the subgeneric name *Mocrendes* Nye, 1975 is available, represents the first account.

Material and methods

Abbreviations:

ANIC – Australian National Insect Collection, Canberra, Australia;
BMNH – British Museum (Natural History), London, United Kingdom (currently NHMUK);
MHNG – Muséum d'histoire naturelle, Geneva, Switzerland;
NHMUK – Natural History Museum, London, United Kingdom;
RMNH – Rijksmuseum voor Natuurlijke Historie, Leiden, The Netherlands;
SMF – Senckenberg Museum, Frankfurt am Main, Germany.

Fwl/fwl – forewing length;

N – number of specimens;

x – average.

Results

Taxonomic part

Characterization of the genus-group taxa

***Platyja* Hübner, [1823]**

Platyja Hübner, [1823]. In 1816–[1825], *Verzeichniss bekannter Schmettlinge* [sic] (17): 268. Type species: *Phalaena Noctua umminia* Cramer, [1780], by subsequent designation by Moore ([1885], in 1884–1887).

= *Iontha* Doubleday, 1842. *The Entomologist* 1: 297. Type species: *Iontha umbrina* Doubleday, 1842, by monotypy. Synonymised with *Platyja* by Holloway (2005).

= *Cotuza* Walker, 1858. *List of the specimens of lepidopterous insects in the collection of the British Museum* 15: 1545 [key], 1551. Type species: *Cotuza drepanoides* Walker, 1858, by monotypy. *Cotuza drepanoides* is a junior subjective synonym of *Phalaena Noctua umminia*.

= *Ginaea* Walker, 1858. *List of the specimens of lepidopterous insects in the collection of the British Museum* 15: 1546 [key], 1637. Type species: *Ginaea removens* Walker, 1858, by monotypy. *Ginaea removens* is a junior subjective synonym of *Phalaena Noctua umminia*.

= *Cremnodes* [C. & R.] Felder, 1874. See below under *Platyja* subg. *Mocrendes* Nye, 1975.

= *Yerongponga* T. P. Lucas, 1901. *Proceedings of the royal Society of Queensland* 16: 82. Type species: *Yerongponga exequialis* T. P. Lucas, 1901, by monotypy. Synonymised with *Platyja* by Edwards (1996).

= *Mocrendes* Nye, 1975. See below under *Platyja* subg. *Mocrendes* Nye, 1975.

Taxonomic remarks: *Ginaea* was first synonymised with *Cotuza* by Moore (1867, misspelled as *Ginea*), deemed by this author to be the correct generic name for *P. umminia*; subsequently, Moore ([1885] in 1884–1887) eventually subsumed *Cotuza* into *Platyja*. As noted in the introduction above, *Iontha* was sunk with *Platyja* by Holloway (2005), same as for *Mocrendes*, which in turn had been proposed as a replacement name for *Cremnodes* [C. & R.] Felder, a junior homonym to Foerster's in the Hymenoptera. *Yerongponga* was conditionally synonymised with *Platyja* by Kitching (1987), a suggestion brought forward into a formal way by Edwards (1996). Among the authors who most recently treated this group, Holloway (2005) retained all junior generic names as full synonyms of the senior one, though he suggested that a number of them, such as *Iontha* and *Mocrendes* (as *Cremnodes*), could actually be used to circumscribe subgenera. Kononenko & Pinratana (2013) explicitly recognised subgeneric status to *Platyja* s. str., *Iontha* and *Mocrendes*. This approach is preliminarily followed here as from the screening over the whole genus group so far undertaken, species of the *torsilinea* group do actually show some binding characters that enable their circumscription under a revised subgeneric concept of *Mocrendes*. However, a conclusive diagnosis and taxonomic arrangement of the *Platyja* genus group will become available once the whole revision of its various lineages is concluded.

***Platyja* subgenus *Mocrendes* Nye, 1975**

Mocrendes Nye, 1975. *The generic names of moths of the world* 1: 319. Replacement name for *Cremnodes* [C. & R.] Felder, 1874 (preoccupied by Foerster, 1850). Type species: *Cremnodes lemur* [C. & R.] Felder, 1874. Synonymised with *Platyja* by Holloway (2005) but used at subgeneric level by Kononenko & Pinratana (2013) by virtue of ICZN (1999: art. 61.3.1).



= *Cremnodes* [C. & R.] Felder, 1874. In: Felder C. et al., [1865]-1875, *Reise der Österreichischen Fregatte Novara um die Erde in den Jahren 1857, 1858, 1859 unter den Befehlen des Commodore B. von Wüllerstorff-Urbair* (Zoologischer Theil) 2 (2) Lepidoptera (Atlas): Erklärung der Tafel CXIII, pl. 113, fig. 9. Type species: *Cremnodes lemur* [C. & R.] Felder, 1874, by monotypy. A junior homonym of *Cremnodes* Foerster, 1850 [Hymenoptera]. The objective replacement name is *Mocrendes* Nye, 1975. Synonymised with *Platyja* by Holloway (2005).

Diagnostic remarks: Species falling into this group have usually been considered members of *Platyja* whose males have filiform antennae, elongated forewings and strongly modified hindwings with either variously lobate termen or loosely scaled areas with distorted veins (resonator), often with both. As noted above, this type of antennae should better be stated as midventrally monopectinate. This feature, combined with structural characters of the genitalia, allows a more formal circumscription of the group than that based on wing features which are susceptible of great variability due to phenomena of sexual selection. All species of the group show in fact a peculiar configuration of the male genitalia, which bear along the costa a long slender, distally clubbed process bearing sparse microsetae much reminiscent of an ampulla, if it was not for its position (ampullae typically branching off from the ventral side of valvae, cf. Pierce, 1909). In the light of this character, which will be referred to here as the ‘ampulloid (process)’, species with less extreme male wing shapes also need to be combined with *Mocrendes*.

Some members of the group show a remarkably similar pattern to African species currently comprised within *Megacephalomana* and *Platyja* s. l., such as *M. rivulosum* (Saalmüller, 1880), and *P. semifimbria* (Walker, [1858]). The latter is actually closest to the former but has been moved to *Platyja* by Holloway (2005) from *Facidina* Hampson, 1926, where it had been placed by Poole (1989) following its removal from *Facidia* Walker, 1865. However, the absence of the costal ampulloid process, the conspicuously tripectinate antennae and the normal hindwing configuration in males of these African taxa indicate that they are not directly related to Indo-Australian *Mocrendes*.

Annotated list with descriptions of new species

***Platyja (Mocrendes) torsilinea torsilinea* (Guenée, 1852)** (Figs 1–5, 23–25, 36–40, 51–54 & 64)
Ophisma torsilinea Guenée, 1852. *Species général des*

Lépidoptères, Noctuélites 3: 240. Locus typicus: Inde centrale [recte: Silhet]. Holotypus: ♀, by monotypy, in NHMUK (via C. Oberthür collection) [examined].

Note: despite the type locality stated in the description, the holotype is clearly labelled by Guenée as from Silhet, with the indication “C’est la ♀ unique qui a servi à ma description”.

***Platyja (Mocrendes) torsilinea ciacula* Swinhoe, 1893, stat. nov.** (Figs 6, 29, 41, 55 & 65)

Platyja ciacula Swinhoe, 1893. *The Annals and Magazine of natural History, including Zoology, Botany, and Geology* (6) 12 (70): 263. Locus typicus: Port Blair, Andamans. Holotypus: ♂, by monotypy, in NHMUK [examined].

Taxonomic remarks: The concepts of *Platyja (Mocrendes) torsilinea* and *P. (M.) ciacula* have hitherto remained separate in consequence of having been based on specimens of the two sexes, renowned difficulties in correctly associating males and females of *Platyja* and the circumstance that the holotype (♀) of *torsilinea* either remained unavailable to authors such as Swinhoe (1893) and Hampson (1894) or, when it eventually entered the BMNH holdings in 1923 (via C. Oberthür’s collection), it was kept in a separate collection. Accordingly, differences between the holotype compared to other females from India in the BMNH that were assumed to be true *torsilinea*, but which are the so far unrecognised females of *P. (M.) exviola* (see below), were not realized until now. In fact, the holotype of *torsilinea* (Fig. 23) matches females of *ciacula* where only this species of the group occurs, while the misidentified females of ‘*torsilinea*’ originated from places where only males of *exviola* are known (SW Ghats), so that the names *torsilinea* and *ciacula* are here brought together. It is likely that the misunderstanding was driven by Guenée’s (1852) wrong statement about the type locality of *torsilinea*, although correct in the handwritten holotype’s label, which may have led to the assumption that this species was present further south in India. However, when specimens from the Andaman Islands, type locality for *ciacula*, are considered (Figs 6 & 29), the females, and to a lesser extent also the males, show a particular pattern feature which is more reminiscent of *exviola* than typical *torsilinea*, namely the inner line bordering the preapical patch of forewings that more definitely curves upwards to reach the costa less obliquely than in typical *torsilinea*. The outer line bordering the patch is also feebly but consistently





Figures 1–15. Habitus of *Platyja* (*Mocrendes*) species (♂♂). 1 – *P. (M.) torsilinea torsilinea* (Guenée, 1852), Assam, Cherrapunji; 2 – ditto, Vietnam; 3 – ditto, Vietnam; 4 – ditto, Malaysia, Genting [Sempah]; 5 – ditto, Brunei, Bukit Retak; 6 – *P. (M.) torsilinea ciacula* Swinhoe, 1893, holotypus, Andaman; 7 – *P. (M.) exviola* Hampson, 1891, holotypus, India, Nilgiris; 8 – *P. (M.) heterogenea* sp. nov., holotypus, Sulawesi, Minahassa; 9–11 – ditto, paratypes, Bolaäng; 12 – *P. (M.) sukabumensis* sp. nov., holotypus, Java, Priangan; 13 – *P. (M.) flavimacula* Semper, 1901, topotypus, Mindanao, Mt. Agtuuganon; 14 – ditto, topotypus, Carmen; 15 – ditto, Luzon, Mt. Polis [scale bar = 1 cm].



more sinuous in the Andaman samples.

Besides these features, there are no other similar traits between the Andaman population and *exviola*, which is a species sharply differentiated in the genitalia of both sexes and the males have no hindwing resonator. A question arises then as regards the taxonomic treatment of the Andaman population. As noted herein, *P. (M.) torsilinea* is a broadly distributed species showing quite some variation. It appears to be very variable in the male sex, somewhat showing two morphoclines while proceeding to the Northeast and the Southeast of its range. In fact, individuals from the NE such as in North Vietnam and SE China are less extreme in the elongation of forewings, which are thus broader, and also with weaker secondary sexual characters of the hindwings (e.g., Fig. 2). In contrast, males from the SE (Sundaland) sport particularly narrow forewings and more strongly modified hindwings (e.g., Fig. 5). However, males either from other areas or the same populations are less divergent. Females instead appear to be more uniform in external appearance.

This situation prompted us to dissect males from several geographic locations (Figs 36–41, 51–55, for a selection), whose outcome was that notable variation occurs in features such as the slenderness and elongation of the ampuloids and cuculli, partly also in the degree of incrassation and very outline of the saccular lobes, in the thickness of the uncus and the relative size and orientation of the vesical lobes. Nevertheless, the observed variation neither showed geographic congruence nor consistency among different characters, so that we could not find in the genitalia sufficient morphological evidence to split the concept of *torsilinea* any further. This does not exclude the possibility that, with more powerful insights into the genetic constitution of different populations, valuable clues to substructure this morphospecies into more biospecies can be found. The same morphological considerations basically apply to individuals from the Andamans, though their unusually shaped preapical patch of forewings, peripheral distribution, and insularity, to which also the somewhat more compact forewing shape of the females, suggest recognizing their singularity by ranking the Andaman population at the subspecific level, as *Platyja (Mocrendes) torsilinea ciacula* Swinhoe, 1893 (**stat. nov.**). It is worth noting that a male from Peninsular Malaysia (Fig. 4) shows a forewing patch whose inner edge is not dissimilar from that of Andaman samples, and that another pattern feature seen in these, that is the less oblique forewing postmedial, is occasionally found

also in typical *torsilinea*.

Diagnostic remarks: Subspecies *torsilinea* (Figs 1–5, 23–25): Male (fwl = 24–29 mm, $\bar{x}$ = 26.17 mm, N = 15) with elongate acuminate forewing tipped by conspicuous, well-defined, dark brown subtriangular preapical patch, hindwing with paired elongated loosely scaled areas alongside the median vein in relief (resonator) (this feature is more weakly expressed in populations from the NE of the range) and smoothly convex distal margin. Female (fwl = 23–28.5 mm, $\bar{x}$ = 25.50 mm, N = 16) with elongate albeit broad forewing tipped by conspicuous, well-defined, dark brown subtriangular preapical patch, this very elongate and with inner edge distinctly oblique with respect to costa. Subsp. *ciacula* (Figs 6 & 29): As in nominotypical subspecies (σ fwl = 26 mm, $\bar{x}$ = 26 mm, N = 2; ϕ fwl = 24 mm, N = 1) except for inner edge of preapical patch distinctly arched and ending approximately perpendicular on costa, particularly in the female, whose forewing is also less elongated.

In the male genitalia, the saccular lobes are subtriangular, variably produced, the cuculli long and slender, bent ventrally, the ampuloids of variable thickness, usually outwardly arched, and the juxta consists of a very broad sub-rhomboid inferior plate, membranous along the midline, and two very small apical winglets (Figs 36–41). The phallus vesica shows a broad central corpus from where two main anteriorly oriented conical lobes protrude, these of variable size and relative orientation, among which another big lobe terminated by an apical lobelet (this not everted in Fig. 51) and a short blunt apically bilobed one oriented towards the phallus shaft lie; a small, serrated plate in continuation of the shaft is present at base of the vesica corpus (Figs 51–55). In the female genitalia, the lodix lobes are subtriangular, slightly constricted at middle, and terminating into smoothly rounded tips; the ductus bursae is wide and flat, almost entirely sclerotized, the sclerotization following up on sternum A8 as a triangular plate; and the corpus bursae shows a wrinkled cervical sclerite (Figs 64–65).

Distribution: NE India (see note above regarding supposed presence in Central India), Andaman Islands, Nicobar Islands, Burma, SE China, Thailand, Indochina (Laos, Cambodia, Vietnam), Malay Peninsula, Sumatra, Borneo, Java, Bali. The Andaman population corresponds to subsp. *ciacula*, to which also that from Nicobar Islands (Kononenko & Pinratana 2013) should likely be attributed.



***Platyja (Mocrendes) exviola* Hampson, 1891** (Figs 7, 26, 42, 56 & 66)

Platyja exviola Hampson, 1891. *Illustrations of typical specimens of Lepidoptera Heterocera in the collection of the British Museum* 8: 22, 91, pl. 147, fig. 18 [name dates from p. 91]. Locus typicus: [India] Nilgiri district, S. & W. slopes, 3000 feet. Holotypus: ♂, by monotypy, in NHMUK [examined].

Taxonomic remarks: A generally poorly known species whose females have mostly been misidentified as those of *Platyja (Mocrendes) torsilinea* (see above).

Diagnostic remarks: Compared to other relatives of the *torsilinea* group, *P. (M.) exviola* (♂fwl = 24–26 mm, x = 24.67 mm, N = 3; ♀fwl = 23–25 mm, x = 24 mm, N = 2) is the species with the least marked secondary sexual characters of the male (Fig. 7). In fact, its forewing is more compact than in its allies, and its hindwing is without signs of distorted veins and is devoid of a resonator; a preapical patch is present but greatly blurred into the overall dark brown ground colour of the forewing. The female looks like one of *torsilinea* albeit with less elongated wings (Fig. 26); in consequence of this, the outer half of the median field of the forewing is less projected outwardly and the dark brown preapical patch shorter, with its inner edge, if not fully perpendicular, much less oblique with respect to costa than in its congener (notably, these differences do not apply in relation to *torsilinea* subspecies *ciacula*, see above and Fig. 29). The median field is also overall concolorous, warm brown, with the exception of the paler coloured pedunculate lobe, which also appears to be narrower, less globular than in nominotypical *torsilinea*. In the male genitalia, the superior angle of the sacculus is nearly a right angle and very feebly produced, so that the saccular lobes are practically non-existent; the ampuloids are very long, slender and outwardly arched, the cuculli are also very long and slender, arched dorsally, so as to form a U-configuration with the ampuloids; the juxta is similar to that of *torsilinea*, but the inferior plate is more broadly rounded and there is a longer and thinner constriction between this and the apical winglets (Fig. 42). The phallus is almost abruptly bent at middle, with a voluminous vesica whose main corpus projects posteriorly into a conical, heavily scobinate lobe and, beyond a mesial constriction, anteriorly into a large trilobate sack, the largest lobe subquadrate and distally scobinate, the smallest bearing a stout apical cornutus, and the intermediate in size conical in

shape (Fig. 56). In the female genitalia the lodix is massive, with greatly expanded, obliquely truncated lobes; the ductus bursae is long and comparatively narrow, sclerotized only in its anterior half, the sternum A8 being thus wholly membranous; in the bursa copulatrix there are two cervical sclerites and another one in correspondence with small conical projection (Fig. 66).

Distribution: All known records are from the SW Ghats in Peninsular India, from where the species is likely to be endemic.

***Platyja (Mocrendes) heterogenea* sp. nov.** (Figs 8–11, 27–28, 43, 57 & 67)

Holotypus ♂ NHMUK: [Indonesia: Celebes (= Sulawesi)] Minahassa, 1920, Coll. P. J. v. d. Bergh Lzn., NHMUK010918195, slide NHMUK010315357.

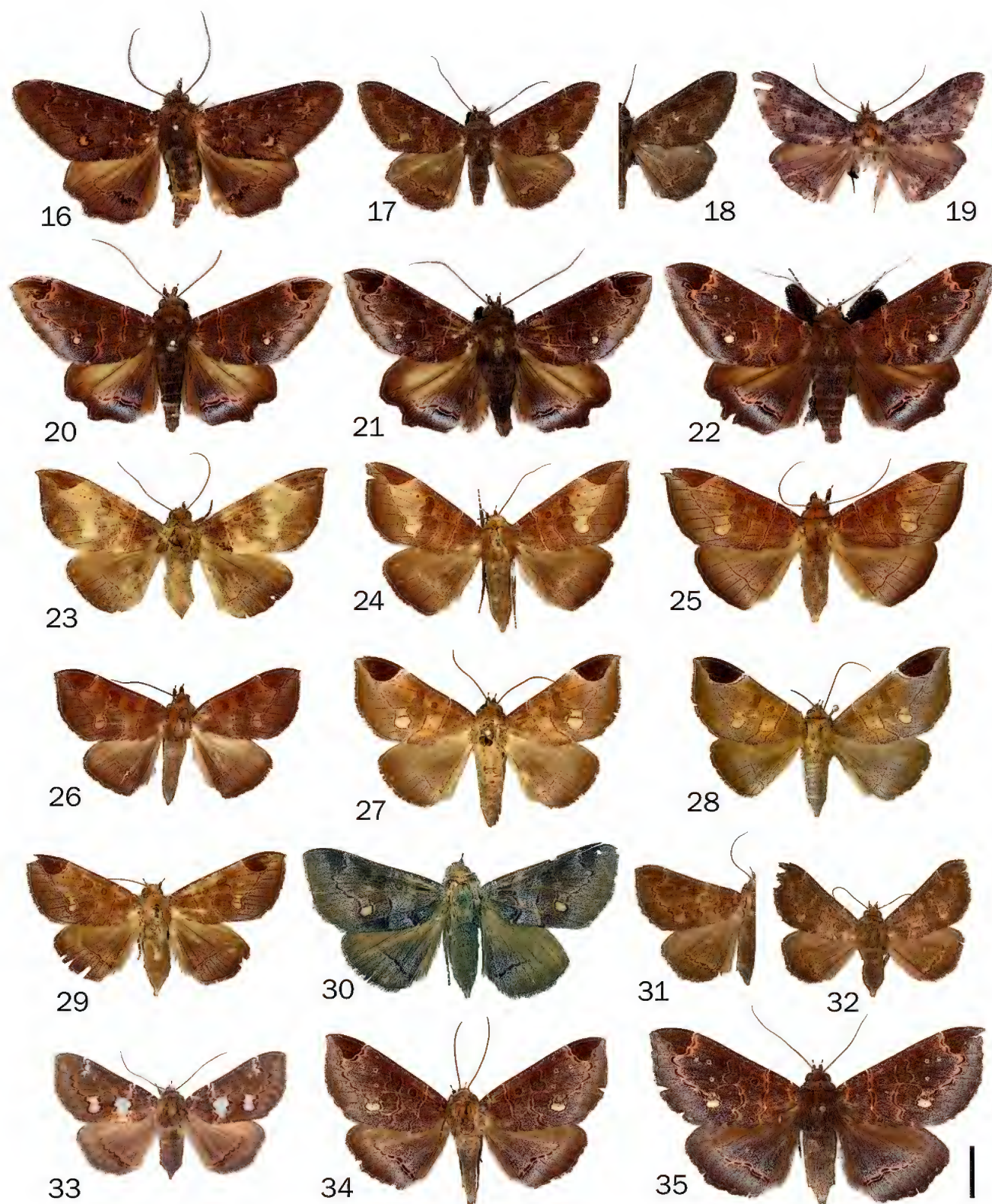
Paratypes 4♂ & 2♀: ♀ NHMUK: Manado, Nord Celebes, [coll.] W. Niepelt, Zirlau, Joicey Bequest 1934-120, NHMUK 010918198, slide NHMUK010316309; 4♂, ♀ RMNH: ♂, Manado, Tanggarie, 410 m, VI.1936, J. P. A. Kalis leg., coll. J. M. A. v. Groenendael; ♂, Bolaäng [= Bolaang-Mongondow]; 2♂, *idem*, 1919; ♀, Dumoga-Bone N.P. [= Bogani Nani Wartabone National Park], Gunong Mogogonipa, 0°27'N 123°57'E, 900-1008 m, 20-23.V.1983, multistrate evergreen forest/moss forest, R. de Jong leg.

Additional material: ♂ MHNG: Sud Sulawesi, R[ou]te de Rantepao à Palopo, 1700 m, G. Lecourt leg.

Derivatio nominis: The species' name, derived from the Greek-derived Latin word “heterogeneous”, stresses the ‘heterogeneous’ appearance of the moth regarding several respects, namely the discrepancy in wing shape between the fore and hindwing of the male, the combination of features otherwise appearing disjunct in other species (*torsilinea*, *flavimacula*) and the dimorphism of the two sexes. The name is an adjective in feminine gender in agreement with the generic name.

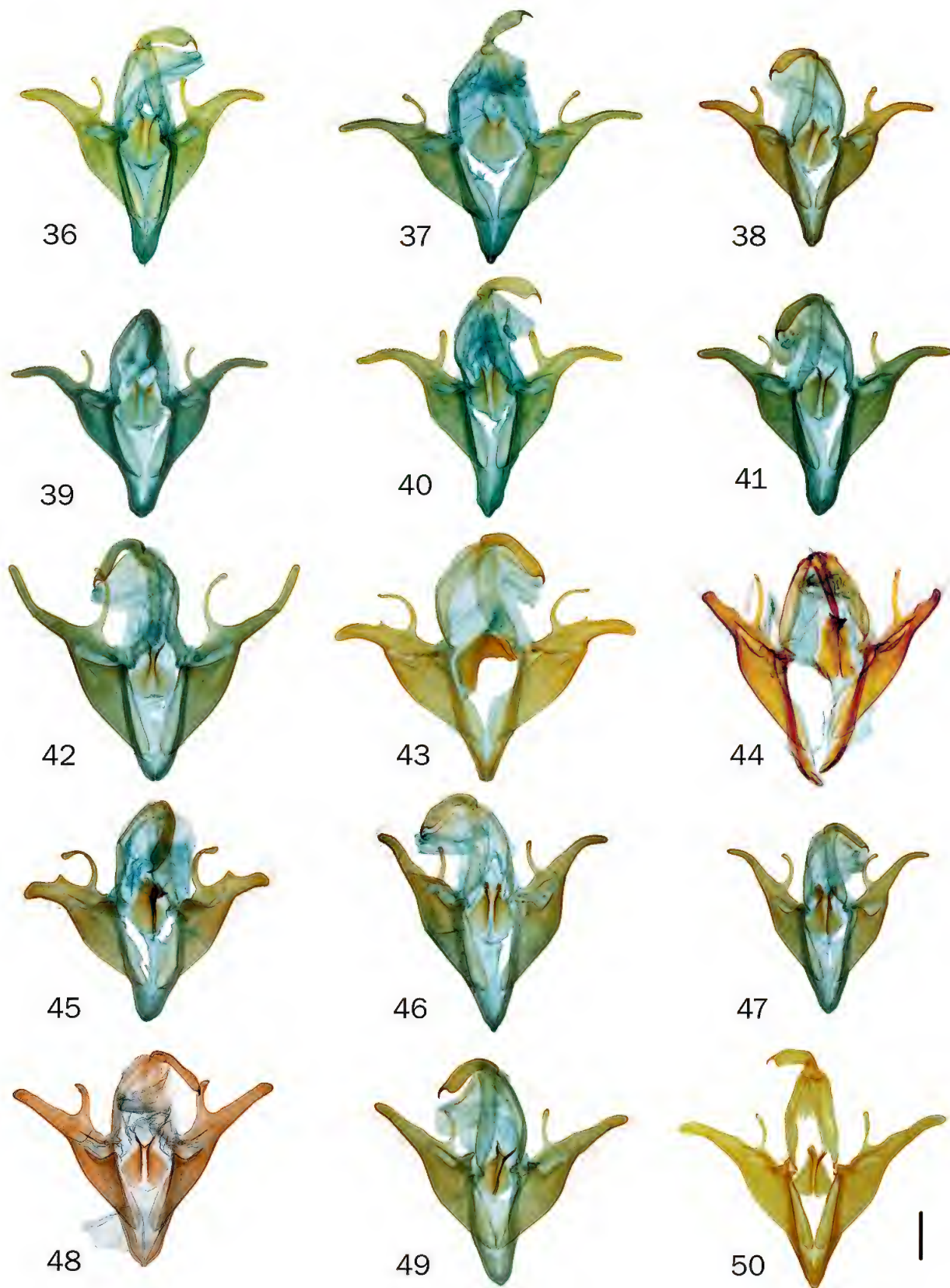
Male (Figs 8–11): Fwl = 26–27 mm, x = 26.60 mm, N = 5; head large, frons flat, eye globular, antenna midventrally uniserrate, labial palpus stout, second joint thick and compactly scaled, blackish brown, slightly incrassate distally, third joint short rod-like, distally clubbed. Patagium flap-like, compactly scaled, tegula long and slender. Ground colour of head and notum medium brown, pectus blackish brown tufted. Forewing oblong-elongated, with costa strongly bowed before apex, oblique termen and smoothly convex tornus; ground colour medium to pale brown, darkest in basal field, paler with some minute white sprinkles in outer half; transverse lines medium brown, subbasal indistinct, antemedial very oblique from costa to anal margin, lined pale





Figures 16–35. Habitus of *Platyja* (*Mocrendes*) species (♂♀). 16 – *P. (M.) lemur* ([C. & R.] Felder, 1874), ♂, Seram; 17 – *P. (M.) lemurella* sp. nov., ♂, holotypus, Java, Trettes; 18 – ♂, ditto, Flores, Bea Nio; 19 – *P. (M.) carpentariella* sp. nov., ♂, holotypus, Australia, Queensland, Cooks Hut; 20 – *P. (M.) cyanopasta* (A. J. Turner, 1908), ♂, New Guinea, Nomnagihé; 21 – ♂, ditto, Snow Mts.; 22 – ♂, ditto, topotypus, Australia, Kuranda; 23 – *P. (M.) torsilinea torsilinea* (Guenée, 1852), ♀, holotypus, Silhet; 24 – ♀, ditto, Assam, Digboi; 25 – ♀, ditto, Sumatra, Lebong Tandai; 26 – *P. (M.) exviola* Hampson, 1891, ♀, India, Malabar; 27 – *P. (M.) heterogenea* sp. nov., ♀, paratypus, Sulawesi, Menado; 28 – ♀, ditto, paratypus, Gunung Mogogonipa; 29 – *P. (M.) torsilinea ciacula* Swinhoe, 1893, ♀, topotypus, Andamans; 30 – *P. (M.) flavimacula* Semper, 1901, ♀, holotypus, Mindanao; 31 – *P. (M.) lemurella* sp. nov., ♀, paratypus, Java; 32 – ♀, ditto, paratypus, Java, Nglirip; 33 – *P. (M.) carpentariella* sp. nov., ♀, paratypus, Australia, Queensland; 34 – *P. (M.) cyanopasta* (A. J. Turner, 1908), ♀, Papua, Humboldt Bay; 35 – ♀, ditto, topotypus, Australia, Kuranda [scale bar = 1 cm].





Figures 36–50. Male genitalia of *Platyja* (*Mocrendes*) species (phalli removed). 36 – *P. (M.) torsilinea torsilinea* (Guenée, 1852), Khasi; 37 – ditto, Assam, Cherrapunji; 38 – ditto, Hong Kong; 39 – ditto, Malaysia, Genting [Sempah]; 40 – ditto, Brunei, Bukit Retak; 41 – *P. (M.) torsilinea ciacula* Swinhoe, 1893, topotypus, Andaman; 42 – *P. (M.) exviola* Hampson, 1891, topotypus, India, Nilgiris; 43 – *P. (M.) heterogenea* sp. nov., holotypus, Sulawesi, Minahassa; 44 – *P. (M.) sukabumensis* sp. nov., holotypus, Java, Priangan; 45 – *P. (M.) flavimacula* Semper, 1901, topotypus, Mindanao; 46 – *P. (M.) lemur* [C. & R.] Felder, 1874, Seram; 47 – *P. (M.) lemurella* sp. nov., holotypus, Java, Trettes; 48 – *P. (M.) carpentariella* sp. nov., holotypus, Australia, Queensland, Cooks Hut; 49 – *P. (M.) cyanopasta* (A. J. Turner, 1908), New Guinea; 50 – ditto, topotypus, Australia, Kuranda [scale bar = 1 mm].



yellowish brown proximally, subparallel with section of postmedial line below cubitus, orbicular stigma large, round, reniform kidney-shaped, both darker brown than ground colour, outlined pale yellowish brown, pedunculate lobe beige, one to three faint beige or white dots beyond reniform, albeit not always present, postmedial lined pale yellowish or white externally, distinctly edged white near costa; preapical patch present, large and conspicuous, dark chocolate brown, regularly rounded alongside edge facing median field; veins lined chocolate brown, except for 1A+2A on basal field, lined beige; terminal line thin, medium brown, fringe beige basally, medium brown distally. Hindwing rhomboid sub-pentagonal, greatly bowed costa, with prominent apex and broad vannus, the wing margin between which is smoothly concave; veins greatly distorted and forming a large semi-hyaline yellowish resonator, affecting almost whole anterior half of wing, crossed by conspicuously ridged median vein; remaining surface of wing middle brown, almost pattern-less, with dark brown section of postmedial line occurring only from below cubitus to before anal margin, externally lined pinkish white and with white sprinkles around; terminal line and fringe as in forewing. Underside of wings medium brown, semi-hyaline in correspondence of resonator. Fore- and midleg conspicuously tufted blackish brown, hindleg medium brown, with elongated crest of scales. Abdomen slender, medium brown.

Male genitalia (Figs 43 & 57): Tegumen and vinculum slender, V-shaped. Valva broad at base, with greatly expanded, elongated obovate sacculus, saccular lobe lying approximately at middle of valva, subrectangular and feebly bilobed; costa expanded, prolonged into thick, comparatively wide and short, ventrally bent cucullus; ampulloid long and slender, outwardly arched, distally clubbed, followed along costa by short spine at base of cucullus. Uncus long, slightly bent at base and feebly incrassate distally before apical spine. Juxta stout and strongly sclerotized, actually in shape of half of a vertically bisected 'carafe'. Phallus long, coecum thin and relatively long, slightly curved, shaft beyond junction with ductus ejaculatorius broadly arched, ending into pointed tip; vesica with compact corpus slightly scobinate posteriorly, three equally sized anterior subconical lobes, and two sclerotized platelets, subbasal and distal, respectively (Fig. 57).

Female (Figs 27–28): FwL = 26 mm, x = 26 mm, N = 3; habitus as in nominotypical *P. (M.) torsilinea* (Figs 23–25), with the exception of more bowed forewing costa before apex, more oblique antemedial and postmedial lines, larger and more

rounded dark brown preapical patch, dots beyond reniform stigma, if present, not filled dark brown, and generally unicolorous paler brown ground colour. Underside of wings medium brown, with pinkish white irroration on hindwing; faint pale dotting on veins in correspondence of postmedial lines.

Female genitalia (Fig. 67): Sternum A7 and apparatus as in *P. (M.) torsilinea* (Figs 64–65), with broader lobes of lodix not constricted at middle, ductus bursae narrower and slightly funnel-shaped anteriorly, stronger sclerotized all through, midventral sclerotization on A8 longer and wider, and bursa more saccate with broad cervical sclerite to the left.

Diagnostic remarks: This species is unmistakable in the male (Figs 8–11) as it combines the pattern features of male *P. (M.) torsilinea* with the wing shape of male *P. (M.) flavimacula* Semper, 1901 (Figs 1–6, 13–15). The female instead (Figs 27–28) shows the greatest similarity to that of *torsilinea* from the nominotypical subspecies of which (Figs 23–25) it can be distinguished by the differences outlined in the description above. As concerns *P. (M.) torsilinea* subsp. *ciacula* (Fig. 29), and partly also the fairly similar *P. (M.) exviola* (Fig. 26), female *heterogenea* is larger, slate-brown-coloured, with more conspicuous and darker preapical patch of forewing, and with a less oblique antemedial line of forewing. In the male genitalia, the new species looks closest to *P. (M.) flavimacula* (Figs 43 & 45), with which it shares the same basic configuration of valvae and juxta. However, it can easily be distinguished from the latter by the narrower sacculus with smaller and more rugulose saccular lobes, longer cuculli, more prominent superior 'beak' of the juxta, longer and more evenly curved distal section of the phallus, and larger lobes of the vesica. The female genitalia of *flavimacula* have not been studied, as the only female known to us and whose identity was not in doubt is the holotype. To distinguish the new species from its close relative *P. (M.) sukabumensis* sp. nov. see the description of this latter.

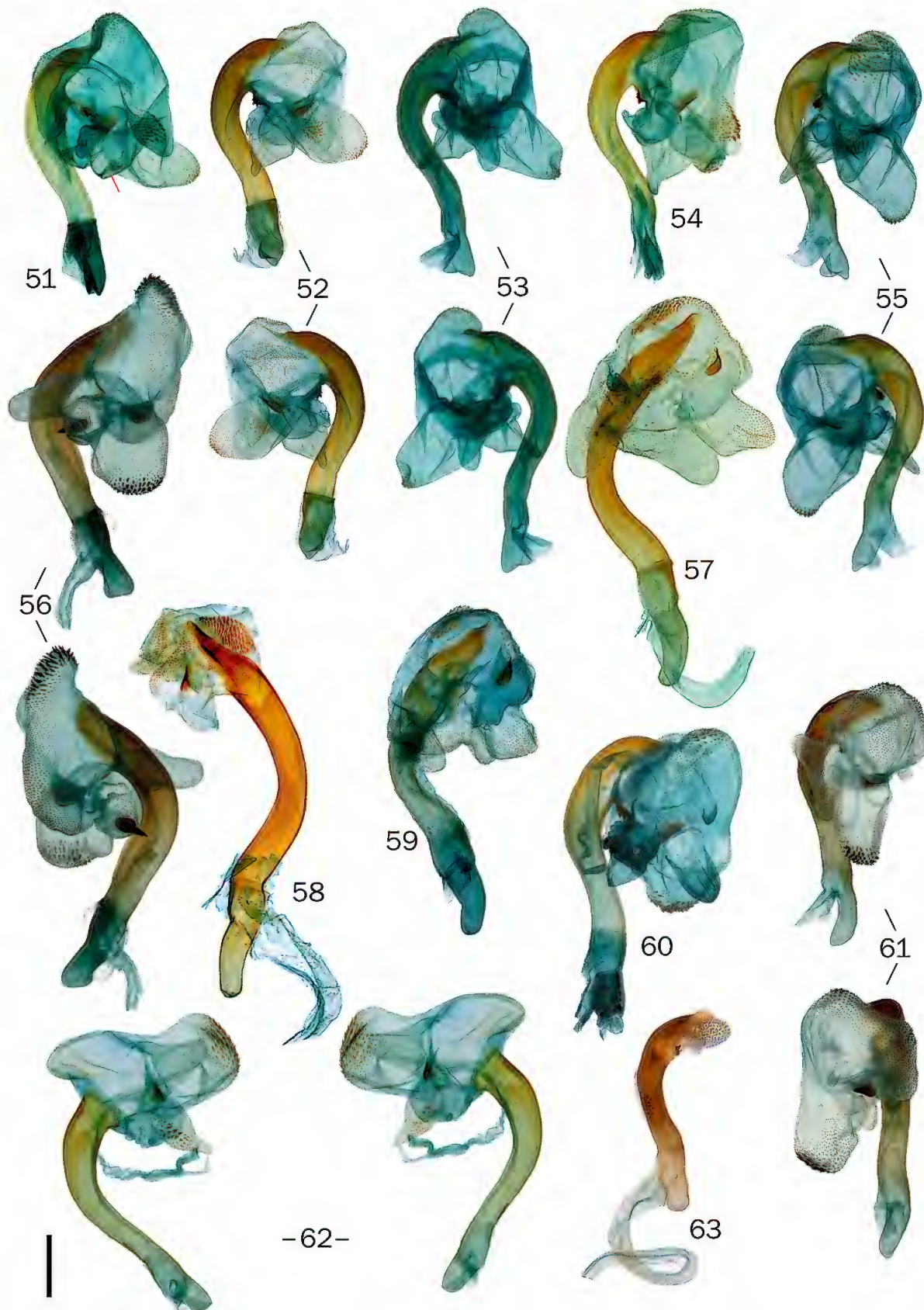
Distribution: So far known from Sulawesi.

***Platyja (Mocrendes) sukabumensis* sp. nov.** (Figs 12, 44 & 58)

Holotypus ♂ RMNH: [Nederlands Indië (= Indonesia)] W. Java, Priangan, 19.I.1940, J. M. A. v. Groenendael [leg. et coll.], slide RMNH.INS1108703.

Taxonomic remarks: Due to the scanty material available, important differences in the





Figures 51–63. Phalli of *Platyja* (*Mocrendes*) species. 51 – *P. (M.) torsilinea torsilinea* (Guenée, 1852), same as Fig. 37 (backslash points to non-everted apical lobelet); 52 – ditto, same as fig. 38 (two views); 53 – ditto, same as Fig. 39 (two views); 54 – ditto, same as Fig. 40; 55 – *P. (M.) torsilinea ciacula* Swinhoe, 1893, same as Fig. 41 (two views); 56 – *P. (M.) exviola* Hampson, 1891, same as Fig. 42 (two views); 57 – *P. (M.) heterogenea* sp. nov., same as Fig. 43; 58 – *P. (M.) sukabumensis* sp. nov., same as Fig. 44 (vesica partly everted); 59 – *P. (M.) flavimacula* Semper, 1901, same as Fig. 45; 60 – *P. (M.) lemur* ([C. & R.] Felder, 1874), same as Fig. 46; 61 – *P. (M.) lemurella* sp. nov., same as Fig. 47 (two views); 62 – *P. (M.) cyanopasta* (A. J. Turner, 1908), same as Fig. 49 (two views); 63 – *P. (M.) carpentariella* sp. nov., same as Fig. 48 (vesica not everted) [scale bar = 1 mm].



male genitalia shown by a singleton examined from Java compared to populations of its Sulawesi relative *P. (M.) heterogenea* sp. nov., coupled with notably sharper elongation of forewings and allopatry (c. 1500 km across the Java sea from nearest locality known in South Sulawesi), leads us to propose herein the erection of a new species reluctantly.

Derivatio nominis: The species is named after the city and district of Sukabumi in Parahyangan (= Priangan) region of West Java. The name is a feminine adjective agreeing in gender with the generic name.

Male (Fig. 12): FwL = 26 mm, N = 1; similar in all respects to *P. (M.) heterogenea* sp. nov., with the exception of the forewing which is more elongate and more acutely tipped.

Male genitalia (Figs 44 & 58): Apparatus as in *P. (M.) heterogenea* sp. nov., excepted for narrower valva, more slender clavi, stout cucullus, straight (aligned with remainder of valva) and apically blunt, thicker and erect ampulloid, feeble hump in place of costal spine, and superior 'beak' of juxta smaller. Phallus shaft as in *heterogenea* [but vesica not compared because it was only partially everted during preparation].

Female: unknown.

Diagnostic remarks: As noted above, the habitus of the holotype closely matches that of *P. (M.) heterogenea* sp. nov. (Figs 8–11) but its forewings are distinctly more apically elongated, so that the termen is even more oblique than in the Wallacean taxon. In the male genitalia, the new species can easily be distinguished from *heterogenea* (Fig. 43) by the straight, apically truncated cuculli (incurved ventrally and apically rounded in *heterogenea*), the thick erect ampulloids reaching in length the apex of cuculli and forming a V-configuration with the latter (thin and smoothly arched into U-configuration in *heterogenea*), the different degree of development between the juxta sections, the inferior plate being longer, and the superior 'beak'-like protrusion smaller.

Distribution: So far known from West Java and to be preliminarily regarded as a vicariant sister species of Sulawesi *P. (M.) heterogenea*, the two thus indicating a Javanese-Celebian connection which excludes Borneo, from where neither of them is recorded.

***Platyja (Mocrendes) flavimacula* Semper, 1901**
(Figs 13–15, 30, 45 & 59)

Platyja flavimacula Semper, 1901. *Die Schmetterlinge der Philippinischen Inseln* 2: 572, pl. 61, fig. 3. Locus

typicus: [Philippinen] Ost-Mindanao. Holotypus: ♀, by monotypy, in SMF [examined].

Taxonomic remarks: A poorly known species whose identity could only be solved after the rediscovery of its type during the present work. Only a few specimens appear to be known.

Diagnostic remarks: Male (Figs 13–15) (fwl = 27–29 mm, x = 27.88, N = 4), with very narrow elongated forewing devoid of distinct preapical patch, rather with blurred black irroration ending well before apex, crosslines distinctly crenulated, ground colour brownish black irrorated with ash grey; orbicular filled with grey and outlined black, reniform deep black with indistinct edges, pedunculate lobe with stem concolorous with median field, only with globular end paler coloured, dull beige-yellow; hindwing shaped as in male *P. (M.) heterogenea* sp. nov., darker coloured and with sinuous median ridged vein crossing the resonator. Female (fwl = 27.8 mm, N = 1) (Fig. 30) patterned as in male, with shorter and broader forewing and hindwing normal, that is devoid of secondary sexual modifications. Despite the remarkable differences in pattern, in the male genitalia this species looks closest to *heterogenea* (for differences see above under this).

Distribution: Philippines (Luzon, Mindanao).

***Platyja (Mocrendes) lemur* ([C. et R.] Felder, 1874)**
(Figs 16, 46 & 60)

Cremnodes lemur ([C. & R.] Felder, 1874). In: Felder C. et al., [1865]–1875, *Reise der Österreichischen Fregatte Novara um die Erde in den Jahren 1857, 1858, 1859 unter den Befehlen des Commodore B. von Wüllerstorff-Urbair* (Zoologischer Theil) 2 (2) Lepidoptera (Atlas): Erklärung der Tafel CXIII, pl. 113, fig. 9. Locus typicus: [in] Ins[ulis] Mollucc[is]. Holotypus: ♂, by likely monotypy, in NHMUK (via L. W. Rothschild collection) [examined].

Taxonomic remarks: The holotype of *Platyja (Mocrendes) lemur* is in very poor condition, with worn and shrunken wings and even with unnaturally darkened parts which seem to have been mouldy or to have been fumigated. The unnatural narrowness of the forewing and approximation in the drawing of the pattern in the original illustration, indicate that it was already damaged at the time of the description. Such a poor illustration evidently misled other authors to place in *Cremnodes* totally unrelated species, including Snellen (1880) with his *Cremnodes macrocera*. Nevertheless, surviving details of the pattern, hindwing lobes and venation show a full match to a male singleton from Seram in the then Joicey collection, now in NHMUK, which



enables us to outline the features of this apparently most rare species.

Diagnostic remarks: Male (fwl = 30 mm, N = 1) with broader, less elongated forewing than that of *P. (M.) flavimacula* (Figs 13–15) and with a straight, not markedly convex anal margin, albeit with essentially similar forewing pattern to the latter, although differing by the warm brown ground colour, complete absence of any patch or darker irroration before apex, presence of white or golden dotting wherever the crosslines of both wings (terminal line included) intersect with veins and a well-defined reniform stigma. The pedunculate lobe appears to be very slender, slightly hooked inwards, filled with pale orange brown. In the hindwing, the margin between apex and tornus is not concave but protrudes at the middle, thus conferring to the whole outline a lobed silhouette that recalls that of *P. (M.) cyanopasta* (A. J. Turner, 1908), and the resonator is present but less strongly developed than in the Philippine species, particularly below median vein. In the male genitalia, the closest similarities are with *P. (M.) torsilinea*, *P. (M.) lemurella* sp. nov., and *P. (M.) cyanopasta*. From the first (Figs 36–41) it can be distinguished by the basally broader valva, that is also slightly angular along the ventral margin, less curved cuculli and slightly more expanded and more rugulose apical winglets of the juxta; from the last (Figs 49–50) by the less asymmetrical saccular lobes, more slender and more ventrally incurved cuculli and less developed and widely opened winglets of juxta; for differences from *lemurella* see below under this species. Differences in the vesical configuration with the three species are notable (cf. Figs 51–55, 60–62). Female unknown.

Distribution: Seram, and likely in other islands of the Moluccas.

***Platyja (Mocrendes) lemurella* sp. nov.** (Figs 17–18, 31–32, 47, 61 & 68)

Holotypus ♂ NHMUK: [Indonesia] E[ast]Java, Trettes, 3000 [ft], May 1932, J. P. A. Kalis [leg.], NHMUK010918832, slide NHMUK010315429.

Paratypes 3♀ RMNH: ♀, Gedanganvak [= Gedanganak], 20 m, 17."II" [= February vel November].[19]27; ♀, Ngilirip, 1936, Meyr. Walsh [leg.]; ♀, [illegible, Javanese site inferred from collector's biography], Fr. A. Th. H. Verbeek [leg.]; all via W. K. J. Roepke collection.

Additional material: ♂ RMNH: Flores, Bea Nio, 16.XI.1952, J. M. A. v. Groenendaal [leg. et coll.]; ♂, *sine data* [probably Java], W.K.J. Roepke coll.

Derivatio nominis: The species is named in analogy to its bigger-sized relative, *P. (M.) lemur*, with a term of endearment based on its specific

name, adjectivized into feminine gender agreeing with the generic name.

Male (Figs 17–18): Fwl = 22 mm, x = 22 mm, N = 2; habitus, pattern and colour fully corresponding to *P. (M.) lemur* except for the smaller size, presence of a faint preapical patch at forewing, slightly darker than ground colour and with sinuous outer edge, thicker and duller brown pedunculate lobe, and much weaker expression of secondary sexual characters. This leads the new species to have neither distorted veins nor loosely scaled resonator on the hindwing, whose distal margin is furthermore not distinctly lobed but almost regularly convex. Underside of wings dark chocolate brown, with straw-coloured dots on veins in correspondence of postmedial lines. Fore- and midleg conspicuously tufted blackish brown, hindleg medium brown, with elongated crest of scales.

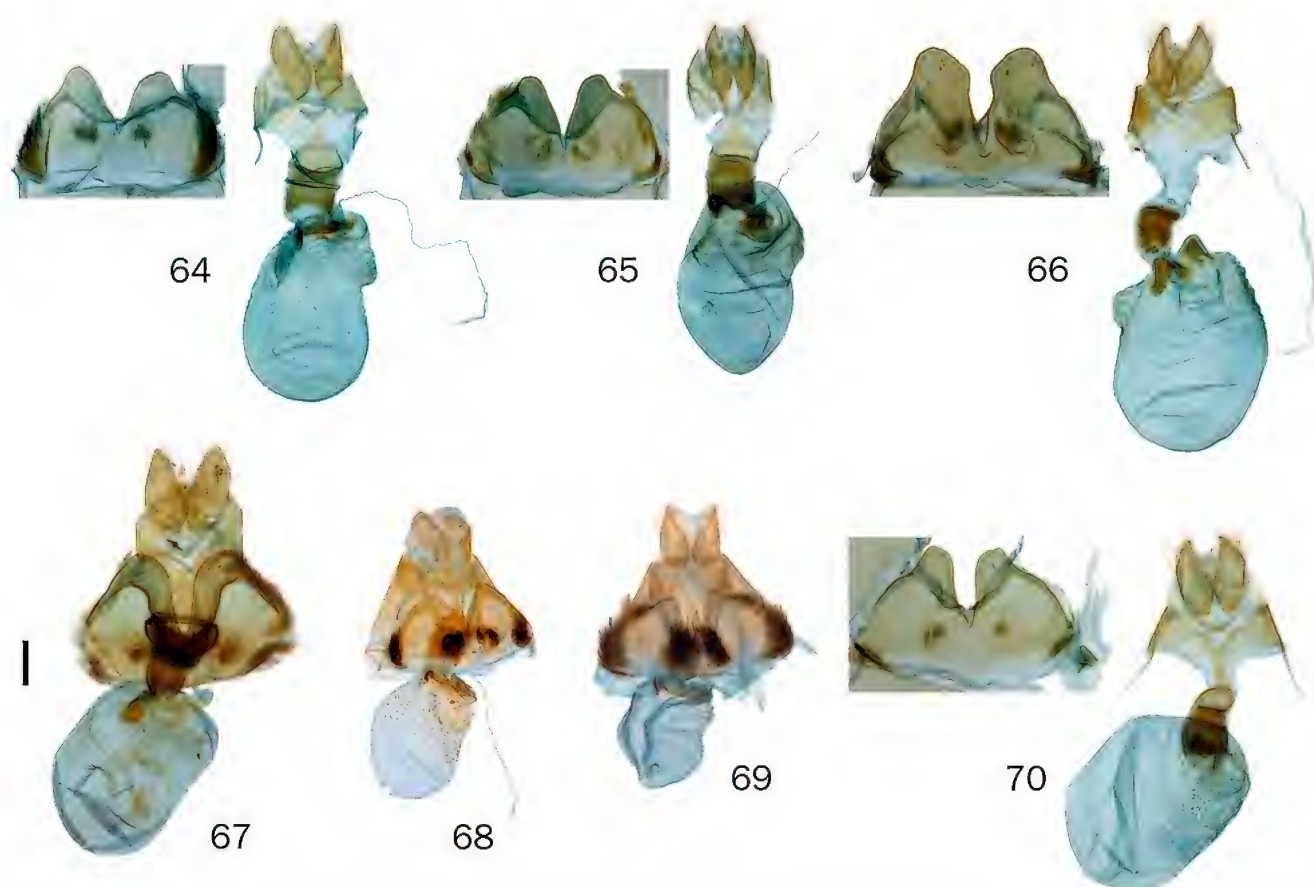
Male genitalia (Figs 47 & 61): Tegumen and vinculum slender, V-shaped. Valva broadest at base, slightly angular along ventral margin of saccular part, sacculus moderately developed, projected into conspicuous subtriangular lobe pointing towards articulation between valva and tegumen, cucullus long and slender, with ventrally incurved tip, ampulloid slender and outwardly arched. Uncus bent at very base, then straight, of uniform width, bearing recurved hook apically. Juxta membranous along midline, consisting of broad inferior plate in shape of narrow circle sector and two large apical winglets. Phallus with fairly elongated and curved coecum, straight middle section, and curved distal third; vesica with compact saccate corpus projected anteriorly into large subcylindrical lobe, densely scobinate at apex, a smaller bilobed pedunculate diverticulum with opposed lobes towards the shaft, and some minor lobes (as in Fig. 61).

Female (Figs 31–32): Fwl = 19–22 mm, x = 20.67, N = 3; as in male, with filiform antenna, broader wings and less oblique, more convex forewing termen.

Female genitalia (Fig. 68): Sternum A7 and apparatus as in *P. (M.) torsilinea* (Figs 64–65), with lodix lobes more acute and not mesially constricted, rather with angle at middle of inner margin, ductus bursae narrower, well sclerotized only in its posterior two thirds, emitting midventral sclerotization onto A8 into long and narrow strip of uniform width; cervical sclerite in shape of narrow sinuous belt.

Diagnostic remarks: Closest to both *P. (M.) lemur* (Fig. 16), of which it looks like a dwarf version without conspicuous modifications in wing shape and venation, and *P. (M.) carpentariella*





Figures 64–70. Female genitalia of *Platytja (Mocrendes)* species (64–66 & 70: lodices removed and placed to left). 64 – *P. (M.) torsilinea torsilinea* (Guenée, 1852), Assam, Digboi; 65 – *P. (M.) torsilinea ciacula* Swinhoe, 1893, topotypus, Andaman; 66 – *P. (M.) exviola* Hampson, 1891, Travancore; 67 – *P. (M.) heterogenea* sp. nov., paratypus, Sulawesi, Menado; 68 – *P. (M.) lemurella* sp. nov., paratypus, Java, Nglirip; 69 – *P. (M.) carpentariella* sp. nov., paratypus, Australia, Queensland; 70 – *P. (M.) cyanopasta* (A. J. Turner, 1908), topotypus, Australia, Queensland, Kuranda [scale bar = 1 mm].

sp. nov. described below. From the former, it can also be distinguished by the wider and duller-coloured pedunculate lobe and presence of a preapical patch on forewing, that however is not as sharply defined and contrastingly dark against the ground colour as in *P. (M.) torsilinea* and other outstandingly patched species of the group. In the male genitalia, the most evident differences from its Moluccan relative occur in the less incrassate uncus, the shape of the juxta with much broader apical winglets and the configuration of vesica (cf. Figs 60–61). To distinguish it from *carpentariella* see below.

Distribution: So far known from Java to the western Lesser Sunda Islands (Flores).

***Platytja (Mocrendes) carpentariella* sp. nov.** (Figs 19, 33, 48, 63 & 69)

Holotypus ♂ ANIC: [Australia, Queensland] 12.43S 143.18E, Cooks Hut, Iron Ra. Q. GPS, 9 July 1998, J. C. Cardale [leg.], Barcode of Life DNA voucher specimen, S[a]mple ID: 10ANIC-06605, BOLD Proc. ID: ANICJ608-10, Gen. prep. ANIC 18649.

Paratypus 1♀ ANIC: [Australia, Queensland] 11.41S 142.42E, 14 km ENE of Heathlands RF Qld, at light, 25–28 Feb 1993, P. Zborowski [leg.], Barcode of Life DNA voucher specimen, S[a]mple ID: 10ANIC-06606, BOLD Proc. ID: ANICJ609-10, Gen. prep. ANIC 18650.

Derivatio nominis: The species' name is a term of endearment based on “Carpentaria”, an old toponym for the Cape York Peninsula, from where the species is known, adjectivized into feminine gender agreeing with the generic name.

Male (Fig. 19): FwL = 23.5 mm, N = 1; habitus and pattern as in male *P. (M.) lemurella* sp. nov. but with darker brownish black colour and without pale spots at the junction between wing veins and transverse lines, wings finely irrorated with whitish grey sprinkles, forewing with transverse lines thicker and black, antemedial more vertical, postmedial distinctly crenulated in correspondence of preapical patch and with pedunculate lobe concolorous with median field and feebly projected outwardly; hindwing with more distorted venation and looser scaled areas configuring weak albeit still



present resonator, and showing slightly different trend of postmedial line whose widest pale lining, orangeish brown, is external. Underside of wings dark chocolate brown, with sparse pinkish white irroration on basal and median areas of hindwing. Fore- and midleg conspicuously tufted blackish brown, hindleg medium brown, with elongated crest of scales.

Male genitalia (Figs 48 & 63): General configuration as in *P. (M.) lemurella* sp. nov. but with cucullus straight and of almost uniform width till apex, this blunt and slightly oblique, shorter and stouter ampulloid, and juxta with sub-pentagonal inferior plate and smaller apical winglets. Phallus shaft as in *lemurella* [vesica not studied as it was not everted].

Female (Fig. 33): FwL = 21.5 mm, N = 1; habitus and pattern as in male, secondary sexual characters excepted and with some blurred pale dotting at veins, and similar also to female *P. (M.) lemurella* sp. nov.; ground colour warm brown, with sparse whitish grey irroration, especially in basal field of forewing and submarginal fields of both wings; transverse lines thick black, orangeish brown-lined; conspicuous milky white filling affects section between ante- and postmedial lines below cubitus and, with a pink hue, whole pedunculate lobe of forewing, white lining extending also along anterior sections of both transverse lines. Underside of wings chocolate brown, with diffuse pinkish white irroration; postmedial lines visible and distinctly crenulate, dark brown, lined pinkish white externally.

Female genitalia (Fig. 69): Sternum A7 and apparatus as in *P. (M.) lemurella* sp. nov. but with lodix lobes broadly obtuse triangular with straight inner margin and midventral strip on sternum A8 wider.

Diagnostic remarks: Evidently a close relative of *P. (M.) lemurella* sp. nov., whose male (Figs 17–18) can easily be distinguished from that of *carpentariella* by the brown colour, presence of pale dotting where veins intersect transverse lines and at termen, thinner black lines, forewing postmedial smoother in preapical area, hindwing without resonator and with postmedial line that is more conspicuously lined pale internally, not externally. In the male genitalia the most remarkable differences of *lemurella* with respect to *carpentariella* consist of the slender, apically tapered and ventrally curved cuculli compared to the stout straight ones of the latter, the thinner and curved ampulloids and the much larger apical winglets of the juxta. Females of the two species are strikingly different in

appearance (cf. Figs 31–33), though it is unknown whether the white markings seen in the unique female known of *carpentariella* are a constant feature of this species. In the pattern elements, the unique female *carpentariella* known shows thicker, more crenulate and darker black transverse lines than its ally, this difference is most evident where the postmedial line of forewing faces the preapical area.

Distribution: Hitherto known from the Cape York Peninsula in northern Queensland.

***Platyja (Mocrendes) cyanopasta* (A. J. Turner, 1908)** (Figs 20–22, 34–35, 49–50, 62 & 70)

Ischyja cyanopasta A. J. Turner, 1908. *Transactions and Proceedings and Report of the royal Society of South Australia* 32: 64. Locus typicus: [Australia] N[orth] Q[ueensland], Kuranda. Holotypus: ♂, by original designation, in ANIC (via Council for Scientific and Industrial Research, Canberra) [examined].

= *Plateja* [sic] *plagosa* Rothschild, 1915. In Rothschild W. & Durrant J. H., *Lepidoptera of the British Ornithologists' Union and Wollaston expeditions in the Snow Mountains, Southern Dutch New Guinea*: 60. Locus typicus: Snow Mountains, Southern Dutch New Guinea [...] Base Camp; Oetakwa River, 3000 ft. Syntypi: 1♂, 1♀ in NHMUK (via L. W. Rothschild collection) [♀ syntypus examined, ♂ not traced].

Taxonomic remarks: Dissections of specimens from New Guinea and Australia revealed slight differences in the saccular lobes which could however be simply ascribable to infraspecific geographic variation, so that pending upon a more extensive screening over a broader sample from different geographic locations the synonymy between *Plateja* [sic] *plagosa* and *Ischyja cyanopasta*, originally proposed by Edwards (1996), is here maintained. In the NHMUK collection there is a watercolour of the series commissioned by G. F. Hampson on valuable specimens preserved in other collections for use in his “Catalogue of the Lepidoptera Phalaenae in the British Museum” that portrays a male of this species, labelled as “*Platyja trogopera* Queensland Kuranda Turner”. It is not known whether such painting antedates the description by Turner (1908) or not, but *trogopera* must be regarded as an unavailable manuscript name.

Diagnostic remarks: An unmistakable species which, besides several unique features, strangely enough combines a series of features seen in other species of the group, as summarised here for the male sex (Figs 20–22): fwL = 26–31 mm, x = 28.97, N = 15; shiny appearance and



sharp forewing apex (*torsilinea*), conspicuous preapical patch (*torsilinea*, *heterogenea*, and *sukabumensis*, albeit shorter, less elongated), trend and waving of transverse lines of forewing (*flavimacula*, *lemur*, *lemurella*, and *carpentariella*), lobate outline of hindwing (*lemur*), strong resonator (*torsilinea*, *heterogenea*, *sukabumensis* and *flavimacula*), and trend of hindwing postmedial (*torsilinea*, *heterogenea*, and *sukabumensis*). Besides the broader wings and, obviously, absence of male secondary sexual modifications, which lead males of this species to show also the heaviest leg tufting among its allies, the female (fwl = 27–31.5 mm, x = 29.50, N = 8) (Figs 34–35) retains the same pattern features seen in the male. It is also the species with the most regularly present and conspicuous dots in median field of the forewing beyond the reniform stigma. In the male genitalia, the valval outline is remarkably similar to that of the *lemur-lemurella-carpentariella* lineage, with cuculli that are however more tapered than in *P. (M.) carpentariella* sp. nov., but not as much as in *P. (M.) lemur* and *P. (M.) lemurella* sp. nov., and only feebly curved ventrally (cf. Figs 46–50). Notable is the great asymmetry in the saccular lobes, the left one being more elongate and digitiform, while the right one is shorter and broader based. Differences have been noted in the relative degree of development of such lobes between dissected specimens from New Guinea and Australia (Figs 49–50). The juxta bears small apical winglets. The phallus vesica has a unique configuration (Fig. 62). In the female genitalia, the lobes of the lodix are stout, prominent but constricted at the middle, with the apex rather blunt; the ductus bursae sclerotized all through, broadest anteriorly, and the sclerotized belt on sternum A8 long and of uniform width (Fig. 70).

Distribution: New Guinea, Australia (northern Queensland), New Britain.

Nomen dubium

Megacephalomana pilosum (Pagenstecher, 1888)
Megacephalon pilosum Pagenstecher, 1888. *Jahrbücher des Nassauischen Vereins für Naturkunde* 41: 156. Locus typicus: Amboina. Holotypus: ♂, by monotypy, in coll. Staudinger [not traced].

Taxonomic remarks: This species was implicitly transferred to *Megacephalomana* by Strand (1943) following the replacement of *Megacephalon* Saalmüller, 1880 (preoccupied by Temminck, 1844 [Aves]). The absence of an illustration in the original description by Pagenstecher (1888)

and unsuccessful attempts to locate the holotype either in the collection Staudinger (Museum für Naturkunde, Berlin, Germany) or the coll. Pagenstecher (Museum Wiesbaden, Germany) compel us to provisionally treat this nominal taxon as of doubtful identity. We mention it here as it is formally a member of the *Platyja* group and its provenance from the Moluccas (Ambon) leaves open the possibility that it is either conspecific or related to one of the species treated in the present work. Unfortunately, the original description is unclear because of several conflicting statements. On one hand, Pagenstecher (1888) compares his *pilosum* to the Madagascan *Megacephalomana stygium* (Saalmüller, 1881) (as *Megacephalon*), which is actually a very differently looking species from *Megacephalomana rivulosum* (Saalmüller, 1880), which superficially resembles the Moluccan *P. (M.) lemur*. On the other, he recalls its subquadrate hindwing which would seem a feature of some *Mocrendes* species but he mentions that its base is shiny translucent, not the anterior half where a resonator is placed. He records also a very small size (wingspan 42 mm) for any Wallacean species with a resonator and distribution of colours and pattern elements which does not appear to match any known species of *Platyja*. The chestnut colour would seem compatible with the much bigger, currently described *P. (M.) heterogenea* sp. nov. (well over 50 mm), but *pilosum* is said to have pectinated antennae, a straight transverse line in the basal field of the forewing, to be much darker beyond this, with a very short termen and metatibiae thickly clothed with blackish scales, and no dark preapical patch is mentioned. Interestingly, Pagenstecher's description looks partly compatible with males of some species of the genus *Crithote* Walker, 1864, but conclusive evidence is still lacking.

Discussion

Subgenus *Mocrendes* of *Platyja* currently consists of nine species, four of which are described herein, distributed in the Indo-Australian Region from the Indian subcontinent eastwards to the Bismarck Archipelago (New Britain). Peripheral areas or definite groups of islands often host endemic taxa, such as *P. (M.) exviola* in the SW Ghats, *P. (M.) flavimacula* in the Philippines and *P. (M.) carpentariella* in northern Queensland.

Despite the often-striking differences in external appearance, members of the group



show quite limited male genital variation, with the most western species (*exviola*) sporting possibly the most extreme development of valval shape. Broadly speaking, configuration of the valva and juxta allows us to recognise two distinct groups, a broadly distributed one with elongated cuculli and broad-based juxta bearing paired small apical winglets, and another group with shorter, stouter cuculli with a small process (spine or hump along costa at their base), and the juxta in the shape of a bisected ‘carafe’ with a prominent superior ‘beak’. The second group is settled in the central area of the range of the subgenus, with *P. (M.) flavimacula* (Philippines), *P. (M.) heterogenea* (Sulawesi) and *P. (M.) sukabumensis* (Java). Vicariance events have evidently led to formation of allopatric species pairs, such as aforementioned *heterogenea* and *sukabumensis* or *P. (M.) lemurella* (Java and W Lesser Sundas) and *P. (M.) carpentariella* (Cape York Peninsula). The latter thus clearly represents a south-eastern lineage which is further closely related to the Moluccan *P. (M.) lemur*, which in turn shares with eastern *P. (M.) cyanopasta* an essentially similar hindwing configuration, with a protruding lobe along the wing margin between the apex and tornus.

Further research will be necessary to detail the phylogenetical relationships among species of the group, a task which will benefit from resolution of other sympatrically occurring groups of *Platyja*, and to assess whether broadly distributed, geographically varying taxa (e.g., *torsilinea*, *cyanopasta*) do actually comprise more evolutionary significant entities.

List of species

Platyja (*Mocrendes*) *exviola* Hampson, 1891
Platyja (*Mocrendes*) *torsilinea* (Guenée, 1852)
Platyja (*Mocrendes*) *torsilinea torsilinea* (Guenée, 1852)
Platyja (*Mocrendes*) *torsilinea ciacula* Swinhoe, 1893 **stat. nov.**
Platyja (*Mocrendes*) *lemur* ([C. et R.] Felder, 1874)
Platyja (*Mocrendes*) *lemurella* **sp. nov.**
Platyja (*Mocrendes*) *carpentariella* **sp. nov.**
Platyja (*Mocrendes*) *cyanopasta* (A. J. Turner, 1908)
Platyja (*Mocrendes*) *flavimacula* Semper, 1901
Platyja (*Mocrendes*) *heterogenea* **sp. nov.**
Platyja (*Mocrendes*) *sukabumensis* **sp. nov.**

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